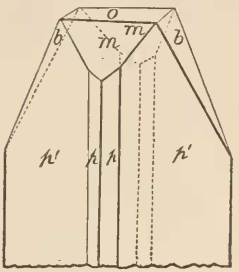
On Strengite from Rockbridge Co., Va.—Prof. Geo. Augustus König described a mineral which he discovered in cavities in Dufrenite. The surface of these cavities is coated with a green spheroidal and radially laminated substance, greenish-yellow, and somewhat silky on the fracture, which the speaker considered to be Cacoxenite. On this latter substance clusters of beautiful, though small, crystals are seen. They present short prismatic forms; their color varies from light pink to deep carmine red, even towards amethystine shades; their lustre is vivid and vitreous, and their hardness slightly below 4. They are transparent. A magnifying power of 2 diameters is required for a proper analysis of the symmetry of the crystals, when they disclose the shape shown in the figure. The prisms are invariably terminated by a rectangular face (often perfectly square) which possesses adamantine lustre (o), and by two domes (b, b) (m, m). The m faces are smooth and brilliant, the b faces are striated. There are two prisms, and the prismatic faces (p') appear striated, but not so strongly as the b faces. Pyramidal faces appear on some of the crystals, but only on one side, whilst opposite only the domatic face m is visible. The face o in this case presents a pentagonal shape. None of the crystals possessing this curious hemimorphism was of measurable size. The goniometer used is one with two telescopes, but the light was so feebly reflected from the minute faces that no image could be obtained with the eye-piece, which, therefore, was removed, and the light reflected into the eye directly.



A number of observations were made for every angle and the mean taken, but this method was necessarily uncertain and ineffective.

Angles measured.

$p \wedge p$	=	122° 20′
$p' \wedge p'$	=	117° 25′
$m \wedge p$	=	139° 35′
$o \wedge p'$	=	90° 20′ (first crystal.)
$o \wedge p$	=	90° 5′ (second crystal.)
$b \wedge b$	=	51°
$m \wedge m$	=	64°
$b \wedge o$	=	115° 20′
$m \wedge o$	=	122°

The symmetry of the mineral is plainly orthorhombic, although the angle $o \wedge p$ was not found exactly 90° by direct measurement; because the prismatic face is not even, but striated. The macrodomatic angle $m \wedge m = 64°$ and $o \wedge m = 122°$, we deduce—

$$(180° - 122°) = 58°, \quad \frac{m \wedge m}{2} = 32°$$

$$58° + 32° = 90°.$$

That is, the basal plane *o* is exactly at right angles with the main axis.

A ground form and its parameters could not be established as no pyramidal faces were observed on any of the measurable crystals.

For the projection of the crystal one has—

Macrodome	tg. 58° = 1.603
Brachydome	tg. 64° 40′ = 2.112
Prism p′	tg. 61° 10′ = 1.816
Prism p	tg. 58° 42′ = 1.644

Blowpipe Characters.—In the closed tube the color of the mineral turns to golden yellow, has a tendency to decripitate, and yields water. Treated in the forceps with the oxydizing flame, the mineral is hardly affected, except the change of color, while the flame colors bluish-green (phosphoric acid). In the point of the reducing flame the mineral fuses at 4 to a black non-magnetic glass. With the fluxes it gives only iron reaction.

For analysis only 30.7 mgr. could be collected. After ignition the reddish-brown powder was soluble in strong nitric acid. Phosphoric acid was precipitated by molybdic solution, and in the filtrate the ferric iron by ammonium hydrate. The author obtained water = 6.1 mgr., $Mg_2P_2O_7$ = 19.8 mgr. (P_2O_5 = 12 mgr.), Fe_2O = 13.0 mgr., or in per cent.—

H_2O	= 19.87 : 18	= 1.104	= 4.16
P_2O_5	= 39.30 : 142	= 0.277	= 1.045
Fe_2O_3	= 42.3 : 160	= 0.265	= 1.000
	101.47		

The mineral is, therefore, $Fe_2P_2O_8 + 4H_2O$, and is identical with "Strengite," described by A. Niess (Neues Jahrbüch f. Min. 1877, p. 8). According to Niess, Strengite occurs at the Dunsberg Limonite mine, near Giessen in mamillary, botryoidal aggregations with radially fibrous structure and drusy surfaces, rarely in single crystals, possessing strong vitreous lustre, transparency, and red color in all shades, especially peach blossom and carmine tints, sometimes nearly colorless. The crystals present a tabular form which is produced by the predominance of the macropinakoid. Niess has only observed the prism, the pyramid, and the macropinakoid, with indications of a macrodome. Hence the type of Strengite from the only localities now known—Giessen, Hessen, and Rockbridge Co., Va.—is remarkably differing. The basal plane and the domes, so characteristic at the latter place, are quite wanting at the former. But of the identity of the mineral there is hardly any doubt possible. The Rockbridge variety is only observed in crystals.

Since presenting the first description to the Academy the speaker examined a specimen on which there was one crystal corresponding to the Skorodite type of the Giessen variety.